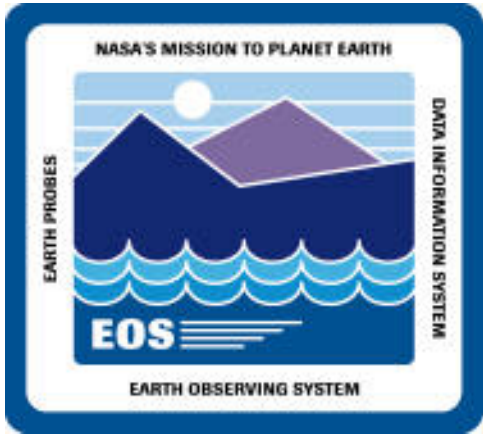

Production Planning Workbench

Joanne Garlow

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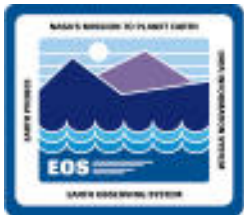
15 April 1996

PDPS Roadmap

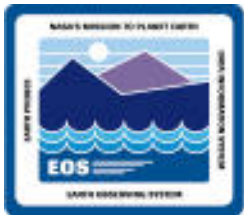


Special Topic: Production Rules
Capture PGE Profile at **SSI&T**
Describe Production Goals through **Production Requests**
Accept **On-demand** Production Requests
Accept Resource Reservations and Create **Resource Plans**

Planning Production Controls -
Create and Activate Production Plans

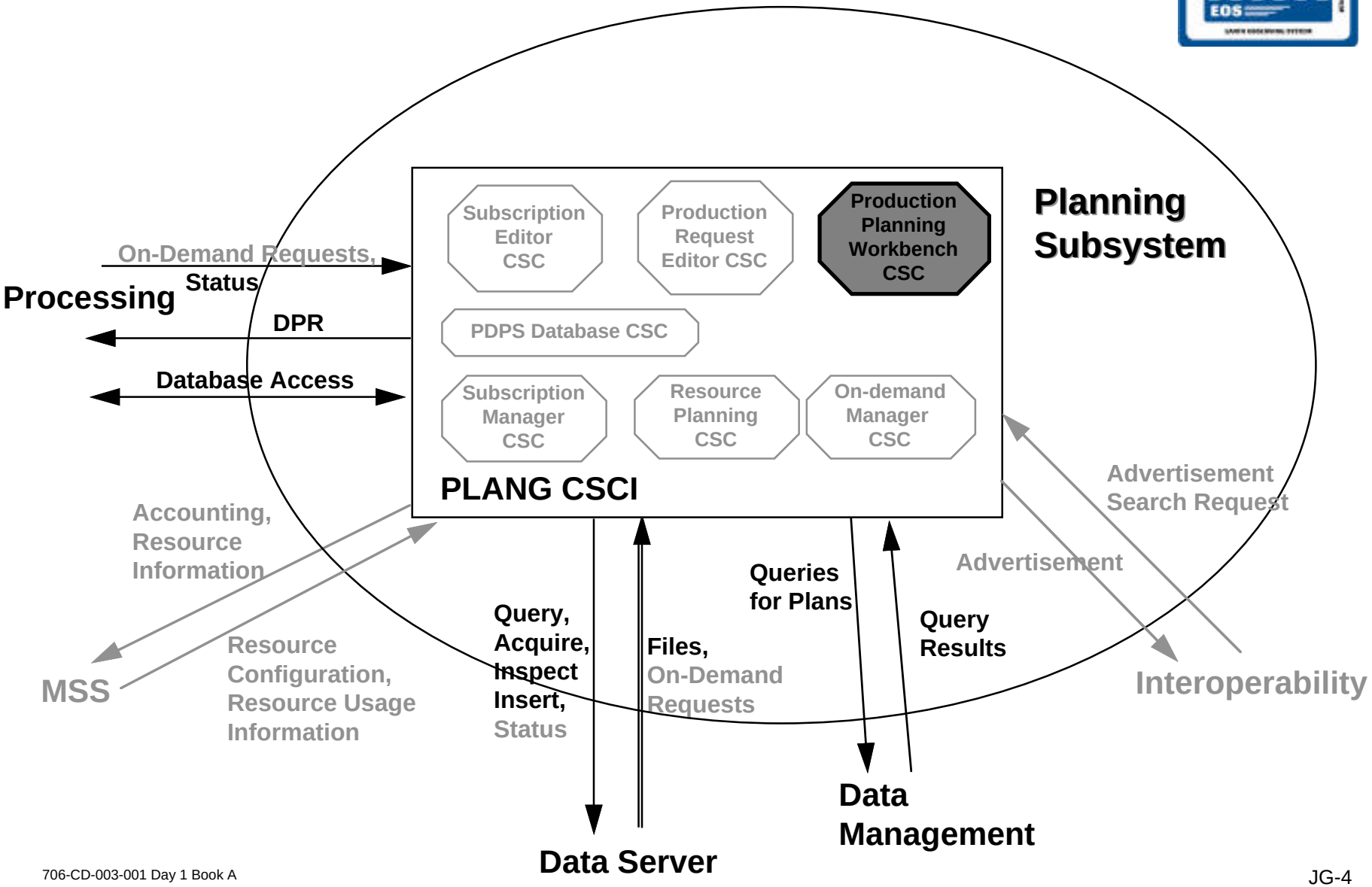
Coordinate Production from Data Arrival with **Subscription** Notifications
Handle L0 **Data Preparation**
Special Topic: Production Subsetting
Realtime **Production** Controls and PGE Execution Monitoring
Special Topic: PGE Exit Handling
Quality Assurance Check Output Products
Special Topic: PDPS Database
Special Topic: Ancillary Data Pre-Processing

Design Drivers

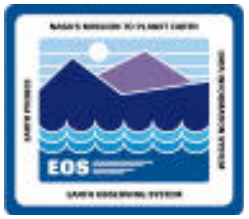


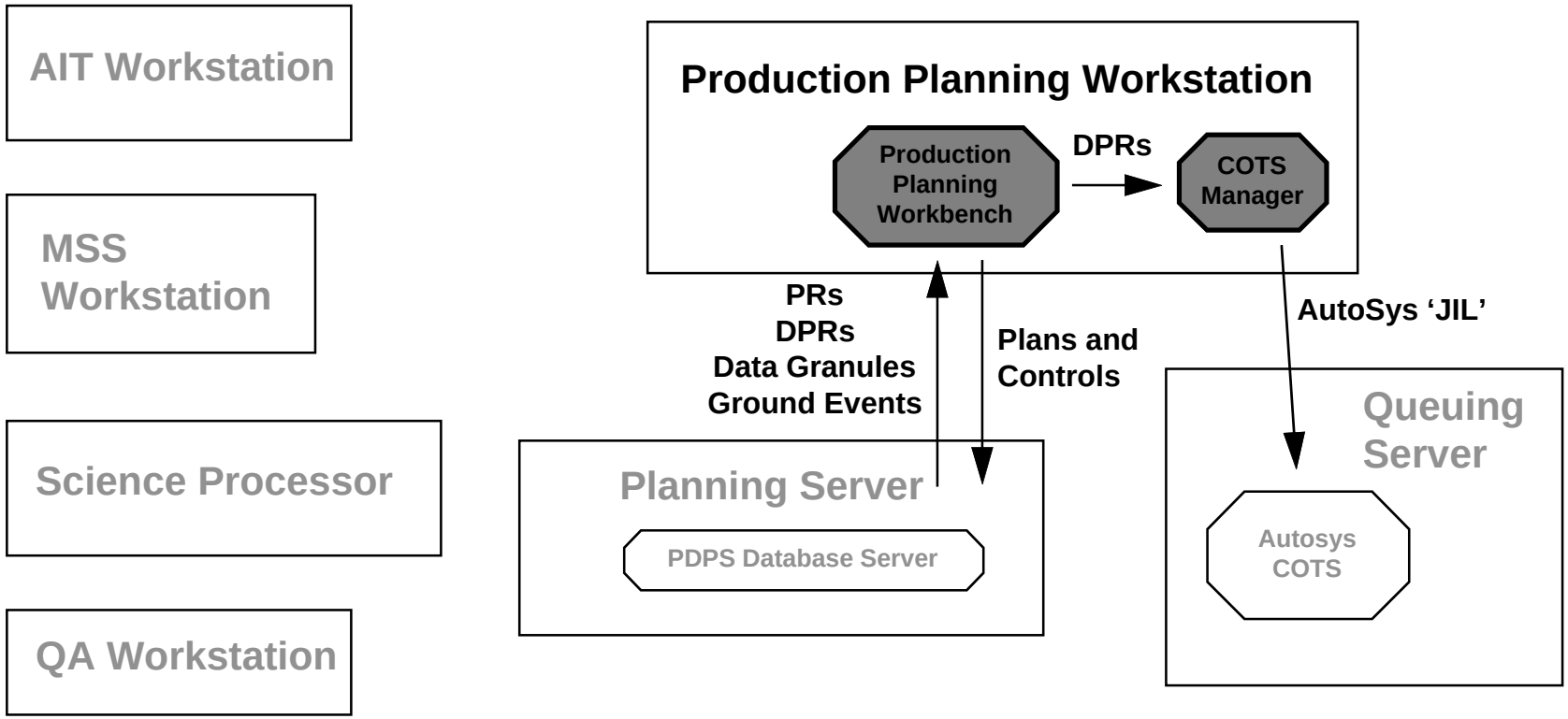
- General Functional Description
  - Creating & Activating Production Plans
  - Production Controls
- New Release B Features
  - Inter-DAAC Planning
    - Exporting and Importing Plans
    - Creating PDAS
  - Limited Automatic Replan
    - Based on on-demand production request
      - new resource plans
      - new predictions of data arrivals
  - Production Strategies
  - Production Rules
- Evolutionary Features
  - “What if” planning at a remote site

Software Architecture Overview

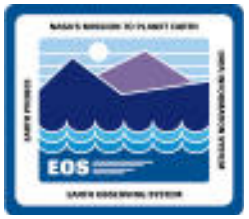


HW/SW Architecture





Public Interfaces/Key Mechanisms



- Data Server Interface
  - Inserting Published Plans and Planning Data Availability Schedules
  - Exporting/Importing Plans
- Data Management Subsystem
  - Querying for Plans from Other DAACs
- Key Mechanisms
  - Process Framework
  - Universal Reference

Routine Planning

- **Workflows:**

  Routine Production Planning **605-CD-002-001 3.2.7.8**

- **Object Model:**

  Production Planning Workbench **305-CD-026-002 4.3.4**

- **Event Traces:**

  Creating a Production Plan **305-CD-026-002 4.5.5**

  This scenario describes the creation of a plan within the Production Planning Workbench.

  Assigning a Priority to an Activity **305-CD-026-002 4.5.6**

  This scenario describes how the Production Planning Workbench assigns a priority to an activity in a plan based on the production strategies associated with that plan.

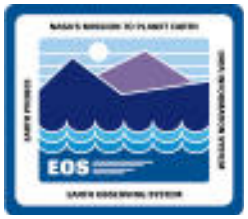
- **PDL:**

  void PlPlanningWorkbench::

  CreateTargetDateReport() **305-CD-026-002 4.3.89**

  This method creates a target date or "goal" report. It compares the target completion dates or target completion deltas for each Production Request with the predicted time of completion of all the DPRs for that PR. In addition, it compares the predicted completion time for each DPR that will create data granules needed at a remote DAAC with the baseline completion time.

Production Planning Controls



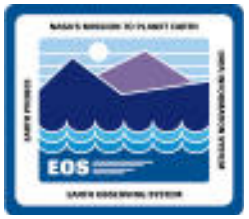
- **Workflows:**

Production Planning Controls	**605-CD-002-001**	**3.2.7.9**
		3.2.7.10

- **Object Model:**

Production Planning Workbench User Interfaces	**305-CD-026-002**	**4.3.5**

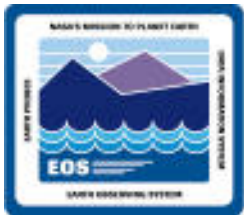
Plan Activation



- **Workflows:**
  - **Routine Production Planning** **605-CD-002-001 3.2.7.8**
- **Object Model:**
  - **Plan Activation** **305-CD-026-002 4.3.9**
- **Event Traces:**
  - **Activating a Plan** **305-CD-026-002 4.5.9**

    This scenario describes the activation of a plan from the Production Planning Workbench.

Publishing Plans



- **Workflows:**
  - **Routine Production Planning** **605-CD-002-001** **3.2.7.8**
  - **Cross DAAC Planning** **6.2.3.4**
- **Object Model:**
  - **Publishing Plans** **305-CD-026-002** **4.3.6**
- **Event Traces:**
  - **Publishing a Plan** **305-CD-026-002** **4.5.7**

    This scenario describes the system response to a production planner publishing a plan which is maintained within the PDPS database.
  - **Importing Plans from Remote DAACs** **305-CD-026-002** **4.5.8**

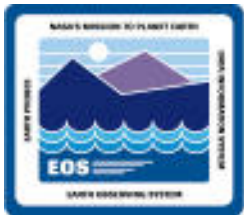
    This scenario describes the process of querying other DAACs plans, importing plans from remote DAACs and identifying any data dependencies.
- **PDL:**
  - **void PlExportedPlan::Export()** **305-CD-026-002** **4.3.51**

    Converts a local representation of a plan into a file that can be stored to the data server
  - **void PlExportedPlan::Import()** **305-CD-026-002** **4.3.51**

    Reads in an exported plan from a remote DAAC and creates a local representation of it.
  - **void PlPlan::IdentifyDataDependencies()** **305-CD-026-002** **4.3.85**

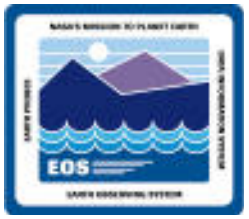
    Identifies the data dependencies between plans from different DAACs.

COTS SW Components



- Planning Object Library
  - Built using Delphi & Hughes Class Libraries
- Planning Algorithm Reused from A
  - Algorithm Inputs changed in Release B
    - Priorities based on Strategies
    - DPR selection based on new Production Rules
    - On-demand placeholders and deferred jobs
    - Earliest start times based on alternate inputs
  - PGE processing times include predictive staging

Summary



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